

ITEM #0703029A – ROUNDED STONE RIPRAP

Description: This work shall consist of the placement of rounded stone riprap, supplemented with other natural materials which meet proper gradation requirements, along the stream bank improvement locations and limits as shown on the plans.

Materials: The material for this item shall consist of the existing naturally formed cobbles, gravel, soils and clean natural sediment from within the channel. This material should be from areas where the action of the stream has already washed the soil and fine material from the deposits of aggregate. The total content, by weight, of particles smaller than 0.08" (sand, silt, clay and soil) and organic material shall not exceed 10%. No cobbles larger than 8" will be accepted without the approval of the Office of Environmental Planning (OEP).

Rock excavated from ledge (bedrock) formations, or broken from larger boulders, will not be accepted. Broken concrete will not be accepted.

If an insufficient quantity of material is available from the existing channel bottom at this site, the Contractor shall furnish supplemental material meeting the approval of the OEP from other sources within the project limits, or from another approved source. Material the Contractor proposes to bring to the site from another off-site source must be inspected and approved by the OEP at the source prior to the excavation or hauling of the material. A minimum notice of 2 weeks must be given to the OEP for inspection and approval.

The rounded stone riprap material shall conform to the following gradation requirements:

Stone Size	% of the Mass
Over 8"	40
4" to 8"	40
1" to 4"	20
Less than 1"	0

Bank run gravel, if approved for use as supplemental material, shall be uncrushed, conforming to the requirements of M.02.02-1 of the State of Connecticut Department of Transportation Standard Specifications for Roads, Bridges and Incidental Construction Form 816.

Construction Methods: The Contractor shall prepare an area, approved by the Engineer, suitable in size and location for stockpiling the rounded stone riprap material, prior to the start of construction, so that it will not be contaminated, mixed with other excavated material or erode. Select a location where disruption to the stream channel and wetland areas caused by moving the rounded stone riprap material to and from the stockpile is minimized during the placement of material. Locate the stockpile where it can remain undisturbed for the duration of the stream channel construction.

If necessary, the Contractor shall perform all containment, diversion, or other separation of the channel flow when placing rounded stone riprap material to minimize sediment disturbance downstream. Any such methods must be reviewed and approved in advance by the OEP.

Before placing any rounded stone riprap material, notify the OEP at least 10 days in advance to ensure proper personnel is on-site. Any and all coordination with the Department of Energy and Environmental Protection (DEEP) Fisheries Division or District Environmental Coordinator will be done through the OEP.

Place the rounded stone riprap material to the thickness and in the locations shown on the plans, and as directed by the Engineer or OEP. Use equipment and placement techniques that will prevent integration with the surrounding material and keep the channel bottom material relatively homogeneous. Place the channel material in a manner that replicates the original condition of the channel, with a well-defined low flow channel connecting to the existing channel.

Place or dispose of any surplus or unsuitable material in accordance with Section 2.02. Restore the stockpile area as directed by the Engineer.

Method of Measurement: Rounded Stone Riprap will be measured for payment by the number of cubic yards of material placed and accepted.

Basis of Payment: Payment for this work will be made at the contract unit price per cubic yard for "Rounded Stone Riprap", completed in place, including all incidental materials, equipment, tools and labor. The price shall also include the following: furnishing all additional materials required to produce the necessary quantity, gradation, and grading, including bank run gravel, and cobbles; all temporary stockpiling, required mixing of on-site and additional materials; and hauling of additional materials to the site.

Any excavation of material will be paid for as "Channel Excavation – Earth" or "Channel Excavation – Rock", as the case may be.

All work required for handling water as described in the special provision "Handling Water" will be included in the lump sum price for that item.

Pay Item

Rounded Stone Riprap

Pay Unit

C.Y.